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ABSTRACT

In the Soviet theory of cognitive development, originated by Vygotsky and elaborated by Leont'ev, acts occur at three levels of abstraction: activities, actions, and operations. According to this theory, an activity has an associated motive and may function directively as a motive. While many activities are possible, one activity tends to predominate at any particular time and "leads" in the sense of being at the top of a hierarchy of possible activities, which varies across cultures and age levels. Within the framework of this developmental theory, an action can be performed efficiently only if it is uncomplicated or if the component operations are performed in a coordinated way, without conscious effort. The theory refers to motoric as well as to verbal behavior and is reconcilable with the findings of animal behavior studies. The apparent reconcilability of the theory with behaviorism is illusory because, in the Soviet theory, thought refracts as well as reflects reality. According to Soviet philosophers, reflection and refraction are properties of all matter, and their quality depends on the nature of the matter. In the human, reflection and refraction are properties of the brain. In this form, they are called consciousness. Thus, consciousness becomes an extraordinarily potent factor in altering the nature of reality. (Author/RH)

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DIALECTICAL MATERIALISM: ANALYSIS OF MENTAL ACTIONS

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The theory of cognitive development originated by Vygotsky and elaborated by Leont'ev has been the dominant one in the Soviet Union for decades (Wertsch, 1979). The theory is, of course, consistent with dialectical materialism, and although other theories are also consistent with this philosophy, the Soviet theory illustrates the philosophy well and is the one selected for presentation here.

In the Soviet theory, acts are analyzed into three levels of abstraction, the levels of activities, actions, and operations (e.g., Kussmann,1976; Leont'ev, 1974; Meacham, 1977; Wertsch, 1979). (They are called levels of "abstraction" because they are components of a whole, and the whole is concrete and the components are abstract in dialectical materialism.) Activities are relatively general acts, such as playing, socializing, and learning; actions are specific acts, such as pitching in a baseball game, conversing with a friend, and memorizing a poem; and operations are routines or habits that compose actions, such as moving various parts of the body in particular ways intended to propel the ball across home plate in the strike zone, formulating and vocalizing word combinations in response to meanings recognized in word combinations produced by the other person, and repeatedly recognizing the meanings of letter symbols as letters and recognizing combinations of letters as words. Activities are energized by motives,and in turn function as motives determining what goals are set in specific situations; actions are directed toward attainment of these goals and are performed with the aid of operations, which "are unconsciously triggered by the contextual conditions of a task" (Wertsch, 1979, p. 88). That is, operations are subordinated to actions, and actions are subordinated to activities.

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An activity has an associated motive, according to Wertsch (1979), which "provides the energizing force behind an organism's activity" (p. 86). However, once energized by its associated motive, an activity seems actually to be a motive, or at least to function as a motive, but in the directive sense rather than the energizing sense. That is, a motive such as hunger energizes an activity, which then functions as a motive leading to specific actions. Luria, in fact, used the word "motive" in this sense instead of the word "activity" (1976, pp. 9, 13, 136, 161-162; see also Istomina, 1948/1975; Leont'ev, 1974).

Many activities--in the technical sense of general acts--are possible, but one activity tends to predominate or lead at any particular

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time. This "leading activity," as it is called, leads in the sense of being at the top of a hierarchy of possible activities. (It also leads in the directive sense, but so do all activities.) The hierarchy of activities--and therefore the probability of occurrence of a particular leading activity--varies across cultures (cf. Luria, 1976) and age levels (e.g., El'konin, cited in Davydov, 1977; Kussmann, 1976). For example, the leading activity in the first year after birth is direct emotional communication; from age 1 year to 3 years, manipulation of objects; from age 3 to 7, play; from age 7 to 11, study for school learning; from age 11 to 15, intimate personal and socially useful communication; and from age 15 to 17, study for occupational learning. The leading activity of the elderly may be socializing (Reese, 1976). The leading activity determines which actions will be performed; it gives them purpose.

Although a specific action may serve different activities (Leont'ev, 1974), the set of actions that serve the leading activity should be the most well-practiced and complete set. Hence, the leading activity should be performed most efficiently and effectively.

An action (in the technical sense) can be performed efficiently only if it is uncomplicated or if the component operations are performed in a coordinated way without conscious effort (see also Vandenberg, 1978, on this point). "Uncomplicated" means that deliberate performance of the entire action does not require more cognitive space than is available; "complicated" means that the demand exceeds the available cognitive space. (The phrase "cognitive space" is not used by the Soviet theorists.) An example is the performance of a complex motor skill. I know how to perform each of the movements involved in a good golf swing and I know how they should be coordinated. However, I cannot perform the coordinated set of movements without conscious control and therefore I do not have a good golf swing. Instead of performing the action of driving the ball, I perform a group of actions with my arms, legs, and so forth. Reading for sense provides another example. As Bugelski (1971) pointed out, noticing typographical errors while intending to read for sense indicates that the reading is being done incorrectly. Noticing typographical errors indicates reading letter by letter, or word by word, but these actions should be unconscious, automatic operations in reading for sense (Guttentag & Haith, 1978; LaBerge & Samuels, 1974).

The theory refers to motoric behavior as well as verbal, and except for the purposiveness it may seem to be reconcilable with behaviorism. With respect to animal behavior it is in fact reconcilable, because in the nonhuman domain purpose is evolutionary rather than teleological: The "food-seeding" behavior of a food-deprived organism is behavior that is likely to make food available, and its occurrence in a food-deprived organism has survival value in the natural selection sense. However, in the human domain, purpose is teleological in the sense of goal-setting and goal-seeking. Goal-setting is a function of leading activities, and goal-seeking is a function of actions. Given that goal-setting and goal-seeking are not found in animal behavior, it follows that leading activities and actions are not found in animal

behavior. Animal behavior reflects the animal's history of successful and unsuccessful adaptations to the environment.

The purposiveness of human behavior is a problem for dialectical materialists, because mentalism is vehemently rejected--to exclude any taint of Hegel's idealism, which was the source of dialectical materialism. Even in the human domain, then, purpose is material rather than spiritual. Specifically, it is a function of thought, and thought is an internalized form of speech. But if thought is internalized verbal behavior, again the theory seems reconcilable with behaviorism, although the behaviorist would question the insistence that thought must be verbal. The insistence reflects the deliberate Pavlovization of Soviet psychology beginning in the 1950s, and Pavlov's conception of the "second signal system" as distinctly human and as verbal (Payne, 1968). The insistence therefore seems to be at least as much political as scientific, but in the Soviet Union the distinction between politics and science is blurred (reflecting the merging of historical materialism and dialectical materialism).

Again, however, the apparent reconcilability is illusory, because although thought (internalized speech) reflects reality, it also refracts reality in the Soviet theory. The reflection-refraction distinction was introduced by Sergei L. Rubinshtein. It is analogous to the distinction between a mirror and a prism. The action of X on Y changes Y, and X is therefore reflected in Y. However, the action of X is at the same time refracted or changed by the nature of Y. In a sense, the organism is both reactive and active, and Jean-Paul Sartre and other philosophers have seen this self-contradiction as a fatal flaw in the philosophy of dialectical materialism. It has concerned Soviet philosophers, and Lenin's solution was to assert that it is a basic, irreconcilable contradiction, but only in an epistemological sense. That is, epistemologically a distinction is made between the knower and the known, and reality is constructed by the observer as well as reflecting reality. This mind-body dualism is rejected ontologically, in that refraction is itself a reflection of the organism's sociocultural history.

To return to the specific issue under consideration--the materiality of thought--the Soviet conception is that thought is an internalized form of speech, as already mentioned. However, even the internalized form of speech is not disembodied in this view, and therefore thought has a material basis in physiological activity. Thought is disembodied in the various "cognitive" approaches, including Piaget's approach, which is idealistic, computer simulations, which are mechanistic, and information processing approaches, which are mentalistic. Skinner's formal position enbodies thought in localizing it "inside the skin," and his informal position embodies it further by invoking physiological activity. (The latter is "informal" because it conflicts with the anti-reductionism of the formal position.)

According to Soviet philosophers, reflection and refraction are

properties of all matter and their quality depends on the nature of the matter. In the human, reflection and refraction are properties of the brain, which is the most highly organized matter presently found. Therefore, reflection and refraction attain their highest present form in the human. In this form, they are called consciousness. Thus, consciousness is a property of the human brain (Wetter, 1966, p. 40). However, consciousness is itself immaterial (not in the sense of "unimportant" but in ths sense of lacking corporality). It is immaterial in the sense in which form is immaterial: Matter is material, but its form is not material; otherwise, its form would itself be matter.[1]

Reflection and refraction are conscious in the human, unlike the animal, and therefore reflection and refraction become

> an extraordinarily potent factor in altering the nature of reality. Whereas the animal type of reflection [and refraction] merely allows them to adapt to the world, the human type, namely consciousness, makes it possible to adapt this reality to the needs of man himself. This same conscious character of human reflection [and refraction] also makes it possible for man to subject his behaviour completely to the control of the intellect. Man is no automation, no plaything in the grip of "unconscious," "irrational" forces or "blind instincts." Understanding and will play the decisive parts in his conduct, and this is precisely what raised him above the rest of Nature, of which, nonetheless, he remains always a part. (Wetter, 1966, p. 49)

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[1] However, though is immaterial only in the epistemological mind-body dualism. It is material, as noted in the preceding paragraph, in the ontological mind-body monism.

References

Buzeiski, B. R. The psychology of learning applied to teaching. Indianapolis: Bobbs-Merrill, 1971.

Davydov, V. V. Major problems in developmental and educational psychology at the present stage of development of education. Soviet Psychology, 1977, 15 (4), 73-95. (Orig. publ. in Voprosy Psikhologii, 1976, No. 4, 3-15.)

Guttentag, R. E. & Haith, M. M. Automatic processing as a function of age and reading ability. Child Development, 1978, 49, 707-716.

Istomina, Z. M. The development of voluntary memory in preschool-age children. Soviet Psychology, 1975, 13 (4), 5-64. (Trans. by M. Vale from Izvestiya Akademii pedagogischeskikh nauk RSFSR, 1948, No. 14, 51-88.)

Kussmann, T. The Soviet concept of development and the problem of activity. In K. F. Riegel & J. A. Meacham (Eds.), The developing individual in a changing world. Vol. 1: Historical and cultural issues. Chicago: Aldine, 1976.

LaBerge, D., & Samuels, S. J. Toward a theory of automatic information processing in reading. Cognitive Psychology, 1974, 6, 293-323.

Leont'ev, A. N. The problem of activity in psychology. Soviet Psychology, 1974, 13(2), 4-33. (Trans. by E. Berg from Voprosy filosofii, 1972, No. 9, 95-108.)

Luria, A. R. Cognitive development: Its cultural and social foundations (trans. by M. Lopez-Morillas & L. Solotaroff, Ed. by M. Cole). Cambridge, Mass: Harvard University Press, 1976.

Meacham, J. A. Soviet investigations of memory development. In R. V. Kail, Jr., & J. H. Hagen (Eds.), Perspectives on the development of memory and cognition. Hillsdale, N. J.: Lawrence Erlbaum Associates, 1977.

Payne, T. R. S.L. Rubinstejn and the philosophical foundations of Soviet psychology. Dordrecht, Holland: Reidel, 1968.

Reese, H. W. Discriminative learning and transfer: Dialectical perspectives. In N. Datan & H. W. Reese (Eds.), Life-span developmental psychology: Dialectical perspectives on experimental research. New York: Academic Press, 1977.

Vandenberg, B. Play and development from an ethological perspective. American Psychologist, 1978, 33, 724-738.

Wertsch, J. W. From social interaction to higher psychological processes: A clarification and application of Vygotsky's theory. Human Development, 1979, 22, 1-22.

Wetter, G. A. Soviet psychology today (trans. P. Heath). New York: Praeger, 1966.